Ontario

Ministry of Health and Long-Term Care
Public Health Division

Ontario Influenza Bulletin
2006-2007 Season

SURVEILLANCE WEEK 24-25 (June 10 – June 23) 2007

This issue of the Ontario Influenza Bulletin provides information on the surveillance period from June 10-June 23, 2007, (Weeks 24 & 25). The analysis for this issue occurred on Thursday June 28, 2007, therefore all data is current to that date unless otherwise specified.

Overall, influenza activity in Ontario during weeks 24 and 25, 2007 was lower than those of weeks 22 and 23, 2007. No sporadically occurring cases of influenza were reported through iPHIS from health units. There were no reports of institutional outbreaks of influenza. For Week 25, the highest level of influenza activity in Ontario was 'sporadic activity' reported from Eastern, Central East, Toronto and South West regions. The remaining three other regions reported 'no activity' levels.

The Bulletin will continue to be published on alternate weeks and the GIS map of influenza activity levels will be posted on 'non-Bulletin' weeks under 'Weekly Influenza Surveillance Maps' at the following link: http://www.health.gov.on.ca/english/providers/program/pubhealth/flu/flu_mn.html.

Note that the Surveillance Report of the 2005/06 Ontario Influenza and Respiratory Infection Outbreak Surveillance Season can also be obtained from the above link.

Please continue to submit weekly activity reports weekly by 4 p.m. every Tuesday. Please refer to page 13 for report submission dates.

Table 1: Summary of confirmed influenza cases and institutional influenza outbreaks by health region (Weeks 24 & 25, 2007).

Confirmed influenza cases*	HEALTH REGION							TOTAL
	North West	North East	Eastern	Central East	Toronto	South West	Central West	
Influenza A	0	0	0	0	0	0	0	0
Influenza B	0	0	0	0	0	0	0	0
Influenza A & B	0	0	0	0	0	0	0	0
Total new cases	0	0	0	0	0	0	0	0
Institutional influenza outbreaks‡	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

SOURCE: MOHLTC [iPHIS, Health Unit Reports to PHD]

* Includes reports of sporadically occurring influenza through iPHIS, as well as cases in institutional outbreaks, with dates of onset in the surveillance period.

‡ Confirmed outbreaks in institutions with onset date of symptoms during the surveillance period.

Table 2: Confirmed cases of influenza by health unit & health region, with an episode date† during Weeks 24 & 25, 2007.

Region	Health Unit	Confirmed Influenza		
		Influenza A	Influenza B	TOTAL
North West	Northwestern	0	0	0
	Thunder Bay District	0	0	0
	TOTAL NORTH WEST	**0**	**0**	**0**
North East	Algoma	0	0	0
	North Bay Parry Sound District	0	0	0
	Porcupine	0	0	0
	Sudbury & District	0	0	0
	Timiskaming	0	0	0
	TOTAL NORTH EAST	**0**	**0**	**0**
Eastern	City of Ottawa	0	0	0
	Eastern Ontario	0	0	0
	Hastings & Prince Edward Counties	0	0	0
	Kingston, Frontenac, Lennox & Addington	0	0	0
	Leeds, Grenville And Lanark District	0	0	0
	Renfrew County And District	0	0	0
	TOTAL EASTERN	**0**	**0**	**0**
Central East	Durham Region	0	0	0
	Haliburton, Kawartha, Pine Ridge	0	0	0
	Peel Region	0	0	0
	Peterborough County-City	0	0	0
	Simcoe Muskoka District	0	0	0
	York Region	0	0	0
	TOTAL CENTRAL EAST	**0**	**0**	**0**
Toronto	Toronto	0	0	0
	TOTAL TORONTO	**0**	**0**	**0**
South West	Chatham-Kent	0	0	0
	Elgin-St. Thomas	0	0	0
	Grey Bruce	0	0	0
	Huron County	0	0	0
	Lambton County	0	0	0
	Middlesex-London	0	0	0
	Oxford County	0	0	0
	Perth District	0	0	0
	Windsor-Essex County	0	0	0
	TOTAL SOUTHWEST	**0**	**0**	**0**
Central West	Brant County	0	0	0
	City Of Hamilton	0	0	0
	Haldimand-Norfolk	0	0	0
	Halton Region	0	0	0
	Niagara Region	0	0	0
	Waterloo Region	0	0	0
	Wellington-Dufferin-Guelph	0	0	0
	TOTAL CENTRAL WEST	**0**	**0**	**0**
	TOTAL ONTARIO	**0**	**0**	**0**

SOURCE: MOHLTC [iPHIS, Health Unit Reports have been extracted using CRN at PHD]

† Episode Date for a case corresponds to the earliest date on record for the case according to the iPHIS hierarchy (Symptom Date > Clinical Diagnosis Date > Specimen Collection Date > Lab Test Date > Reported Date)

Table 3: Cumulative* confirmed cases of influenza by health unit & health region with an episode date† between September 1, 2006 – June 23, 2007

Region	Health Unit	Confirmed Influenza		
		Influenza A	Influenza B	TOTAL
North West	Northwestern	49	0	49
	Thunder Bay District	16	0	16
	TOTAL NORTH WEST	**65**	**0**	**65**
North East	Algoma	22	0	22
	North Bay Parry Sound District	75	0	75
	Porcupine	48	0	48
	Sudbury & District	34	1	35
	Timiskaming	9	1	10
	TOTAL NORTH EAST	**188**	**2**	**190**
Eastern	City Of Ottawa	175	10	185
	Eastern Ontario	32	5	37
	Hastings & Prince Edward Counties	28	0	28
	Kingston, Frontenac, Lennox & Addington	102	2	104
	Leeds, Grenville And Lanark District	26	0	26
	Renfrew County And District	11	0	11
	TOTAL EASTERN	**374**	**17**	**391**
Central East	Durham Region	69	0	69
	Haliburton, Kawartha, Pine Ridge	138	2	140
	Peel Region	191	7	198
	Peterborough County-City	97	0	97
	Simcoe Muskoka District	138	0	138
	York Region	106	3	109
	TOTAL CENTRAL EAST	**739**	**12**	**751**
Toronto	Toronto	519	10	529
	TOTAL TORONTO	**519**	**10**	**529**
South West	Chatham-Kent	11	0	11
	Elgin-St. Thomas	10	0	10
	Grey Bruce	43	1	44
	Huron County	32	0	32
	Lambton County	11	0	11
	Middlesex-London	49	0	49
	Oxford County	19	0	19
	Perth District	40	0	40
	Windsor-Essex County	35	1	36
	TOTAL SOUTHWEST	**250**	**2**	**252**
Central West	Brant County	21	0	21
	City Of Hamilton	253	2	255
	Haldimand-Norfolk	22	0	22
	Halton Region	112	1	113
	Niagara Region	83	1	84
	Waterloo Region	120	0	120
	Wellington-Dufferin-Guelph	86	0	86
	TOTAL CENTRAL WEST	**697**	**4**	**701**
	TOTAL ONTARIO	**2,832**	**47**	**2,879**

SOURCE: MOHLTC [iPHIS, Health Unit Reports have been extracted using CRN at PHD]

* Cumulative case counts include late reports and records that are otherwise reconciled. Therefore, cumulative counts may not equal new cases plus previous cumulative value.

† Episode Date for a case corresponds to the earliest date on record for the case according to the iPHIS hierarchy (Symptom Date > Clinical Diagnosis Date > Specimen Collection Date > Lab Test Date > Reported Date)

Influenza Subtype(s):
During Weeks 24 and 25, 1673 isolates were received by the Public Health Agency of Canada, with a total of 7 each testing positive for influenza A and influenza B. The majority of influenza A isolates (4) were from Alberta (57.1%), while 2 (28.6%) were from New Brunswick and 1 (14.3%) was from British Columbia. Of the 7 influenza B isolates, 4 (57.1%) were from New Brunswick 2 (28.6%) were from Quebec, and 1 (14.3%) was from Alberta.*

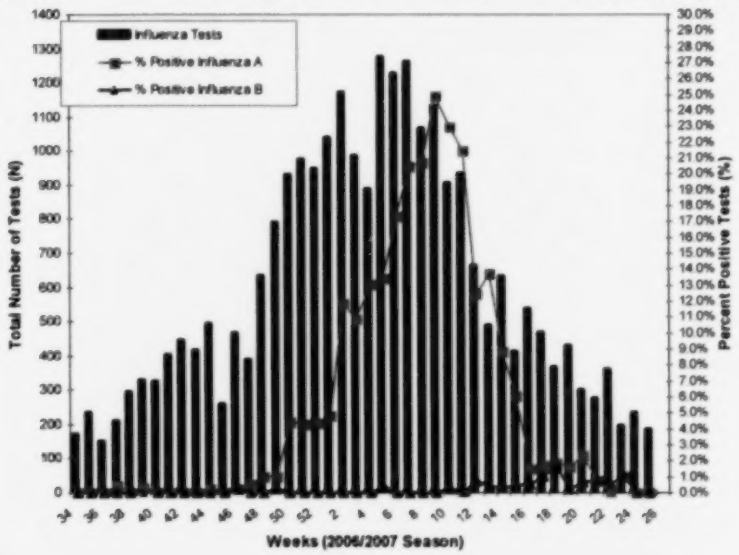
Antigenic Characterization:
The National Microbiology Laboratory (NML) has characterized 988 influenza viruses for the 2006-2007 influenza season: 260 (26%) A/New Caledonia/20/1999(H1N1)-like, 611 (62%) A/Wisconsin/67/05(H3N2)-like, 12 (1%) B/Malaysia/2506/2004-like, and 105 (11%) B/Shanghai/361/2002-like. All but the B/Shanghai/361/2002-like strain are included in the composition of the 2006-2007 Canadian influenza vaccine. Of the influenza A viruses characterized, 77% of the A(H1N1) viruses were from the West while the majority of the A(H3N2) viruses were from Ontario (53%) and British Columbia (25%). **

Antiviral Resistance:
Since the start of the season, the NML has tested 991 influenza A isolates (257 H1N1, 734 H3N2) for amantadine resistance. Three (1% or 3/257) of the H1N1 isolates tested were resistant to amantadine (the resistant isolates originated from Ontario and British Columbia). Of the H3N2 isolates tested, 37% (268/734) were resistant. Of the 1000 influenza A and B isolates (884 influenza A, 116 influenza B) tested for oseltamivir resistance, one (0.1% or 1/1000) influenza A(H3N2) isolate was found to be resistant (from Ontario). The resistant isolate came from an immunocompromised individual who was treated with both oseltamivir and amantadine for influenza and pneumonia. Development of antiviral resistance is not unexpected, particularly in immunocompromised individuals. The case was managed in isolation and the risk to public health is considered very low. These findings underscore the importance of influenza antiviral sensitivity testing to monitor for resistance in Canada and to contribute to the global understanding of antiviral resistance patterns.**

Note: Based on the World Health Organization recommendations, Canada's National Advisory Committee on Immunization (NACI) recommended the **2006-2007** influenza vaccine contain an **A/New Caledonia-like**, an **A/Wisconsin-like** & a **B/Malaysia-like** virus strain.

* These data have been obtained from the Respiratory Virus Detection tables of Public Health Agency of Canada: Weeks 24 & 25, 2007.
** These data have been obtained from the FluWatch report of the Public Health Agency of Canada for Week 22-23, 2007.

Figure 1: Total number of influenza tests performed and percent of positive tests in Ontario reported to the Centre for Infectious Disease Prevention and Control (CIDPC), by report week*.



Source: Public Health Agency of Canada
* Total numbers reported include late reports; therefore totals may not be equal to the sum of the weekly numbers.
Note: Cumulative numbers for season to date are available through FluWatch: http://www.phac-aspc.gc.ca/fluwatch/

Table 4a: Institutional respiratory infection outbreaks in Ontario: New Outbreaks* in Weeks 24 & 25 and Total Outbreaks for the Season**

Institutional Respiratory Infection Outbreaks		
New Outbreaks*	**N**	**% (of outbreaks)**
Influenza A	0	0.0
Influenza B	0	0.0
Influenza A and B	0	0.0
Parainfluenza (All types)	2	25.0
RSV	0	0.0
Other organisms	1	12.5
No organism identified	5	62.5
TOTAL	***8***	***100***
Total Respiratory Infection Outbreaks of the Season to date**	**N**	**% (of outbreaks)**
Influenza A	175	24.3
Influenza B	4	0.6
Influenza A and B	1	0.1
Parainfluenza (All types)	47	6.5
RSV	85	11.8
Other organisms	32	4.4
No organism identified	377	52.3
TOTAL	***721***	***100***
Types of Institutions (All Outbreaks) **	**N**	**% (of outbreaks)**
Long-Term Care Homes	485	67.3
Hospitals	46	6.4
Retirement Homes	68	9.4
Other	3	0.4
Unknown	119	16.5
TOTAL	***721***	***100***

SOURCE: MOHLTC [iPHIS, Health Unit Reports have been extracted using CRN at PHD]

* New outbreaks are those in which the date of onset of illness in the first case occurred and recorded through iPHIS in the current surveillance period; i.e. June 10 – June 23, 2007

** Season to date includes all outbreaks in which the date of onset of illness in the first case occurred from September 1, 2006 – June 23, 2007

Table 4b: Outbreak Related Complications in institutional respiratory infection outbreaks in Ontario during the Surveillance Season*

Outbreak Related Complications (All Outbreaks)	N	% (of total cases)
Total Cases		
Residents	8706	70.8
Patients	802	6.5
Staff	2794	22.7
Total Cases	**12302**	**100**
Deaths	**N**	**% (of cases per role)**
Residents	218	2.5
Patients	15	1.9
Staff	0	0.0
Pneumonia (Chest x-ray confirmed)	**N**	**% (of cases per role)**
Residents	352	4.0
Patients	24	3.0
Staff	17	0.6
Hospitalizations	**N**	**% (of cases per role)**
Residents	410	4.7
Staff	1	0.0
Outbreak Related Complications (Influenza Outbreaks)	**N**	**% (of total cases)**
Total Cases		
Residents	2115	71.4
Patients	193	6.5
Staff	656	22.1
Total Cases	**2964**	**100**
Deaths	**N**	**% (of cases per role)**
Residents	69	3.3
Patients	5	2.6
Staff	0	0.0
Pneumonia (Chest x-ray confirmed)	**N**	**% (of cases per role)**
Residents	128	6.1
Patients	14	7.3
Staff	6	0.9
Hospitalizations	**N**	**% (of cases per role)**
Residents	142	6.7
Staff	0	0.0

SOURCE: MOHLTC [iPHIS, Health Unit Reports have been extracted using CRN at PHD]

* Season to date includes all outbreaks in which the date of onset of illness in the first case occurred from September 1, 2006 – June 23, 2007

Figure 2: Institutional respiratory infection outbreaks in Ontario by onset of illness in the first case: Total Outbreaks from September 1, 2006 – June 23, 2007 by causative organism

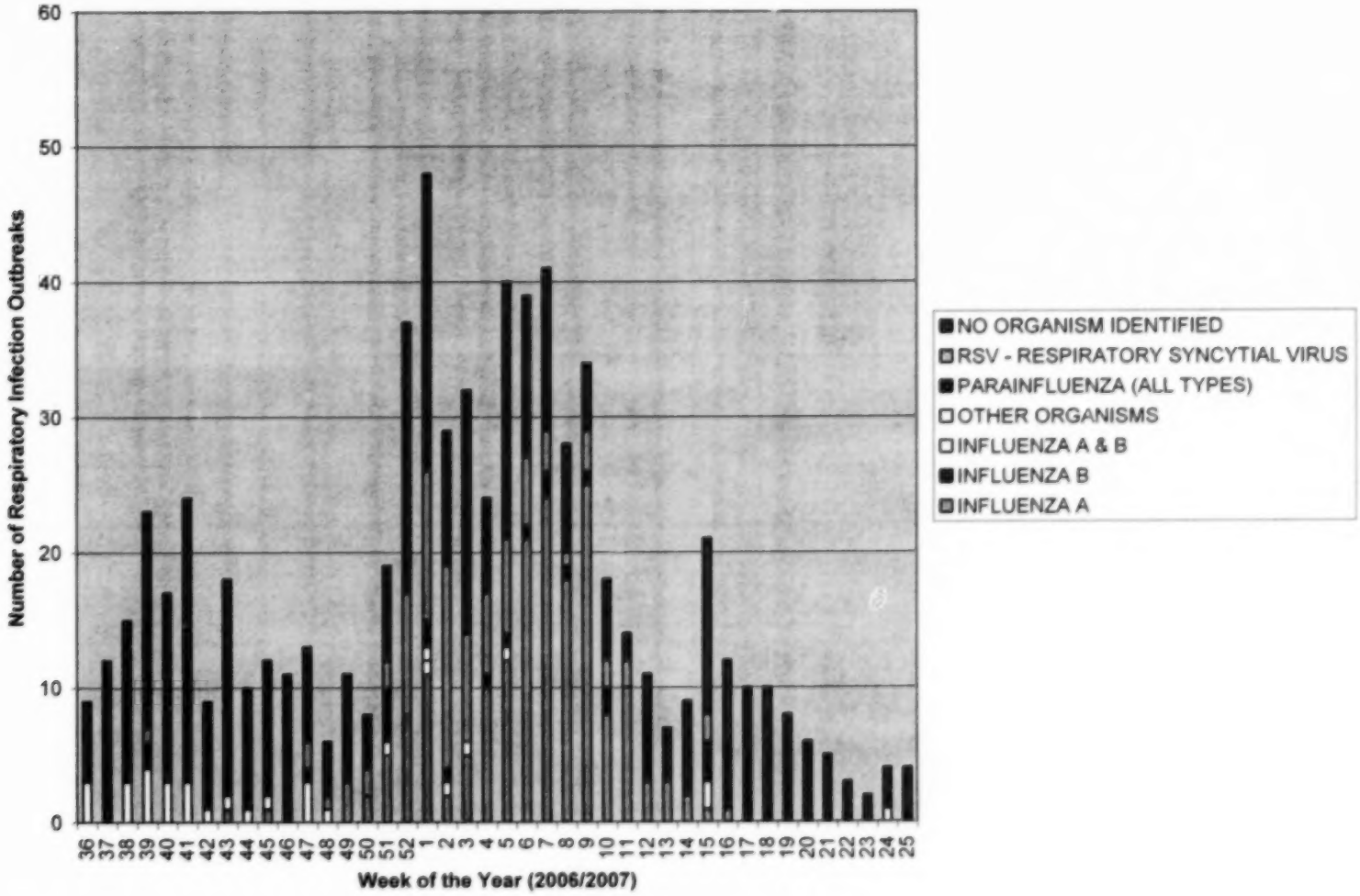
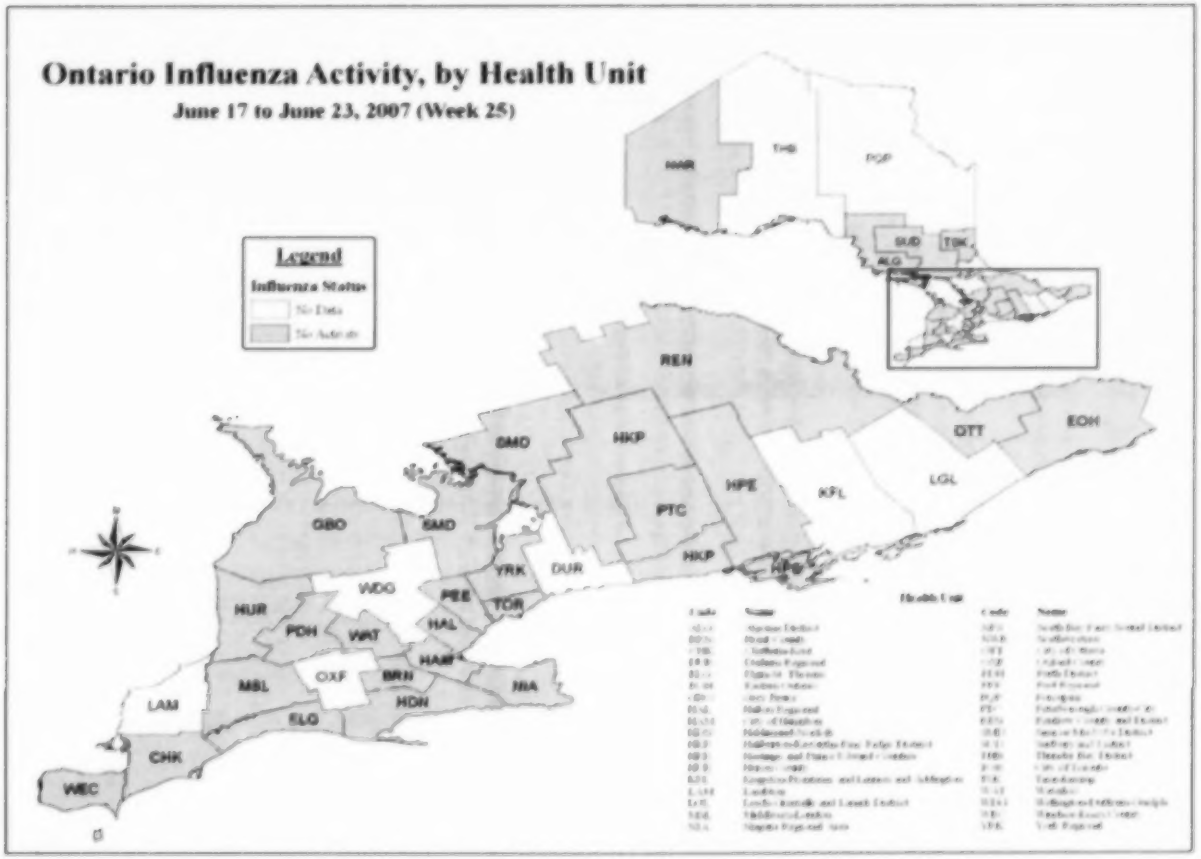

Number of Respiratory Infection Outbreaks
0
10
20
30
40
50
60
36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
Week of the Year (2006/2007)
NO ORGANISM IDENTIFIED
RSV - RESPIRATORY SYNCYTIAL VIRUS
PARAINFLUENZA (ALL TYPES)
OTHER ORGANISMS
INFLUENZA A & B
INFLUENZA B
INFLUENZA A

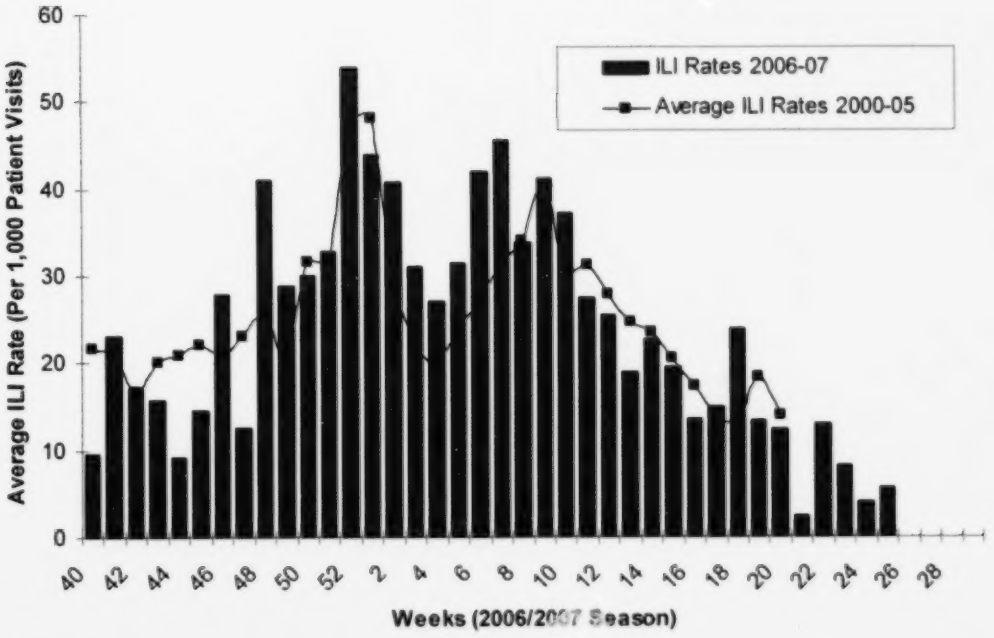
Figure 3: Influenza Activity* levels in Ontario by health unit & health region for Week 25



SOURCE: MOHLTC [Provincial Influenza Activity Report (Appendix C) Database]

* Influenza activity levels are assigned by local public health units and reported to the MOHLTC by the Tuesday following the end of the surveillance week at 4 pm. Activity levels are assigned based on laboratory confirmations, ILI reports from various sources, and laboratory confirmed institutional outbreaks. Please refer to detailed definitions for the 2006-2007 season included in the Appendix-1]

Figure 4: Average influenza-like illness (ILI) consultation rate (per 1,000 patient visits) reported by sentinel physicians* in Ontario in 2006- 2007 season, by report week, Compared to Ontario average† (1999/2000 to 2004/05 seasons).



Source: Public Health Agency of Canada

* Sentinel physician information is reported to Public Health Agency of Canada.

†No data available for mean rate in previous years for weeks 21 to 39 (1999-2000 through 2004-2005 seasons). During weeks 20-39, 2002-2003/2004-2005 seasons, ILI is reported once every two weeks, on even weeks only.

Table 5: Average Influenza-like illness consultation rate (per 1,000 patient visits) by age group and postal code as reported by Sentinel Physicians* in Ontario, for Week 24.

Postal Code	0 – 4	5 – 19	20 – 64	65 +	Unknown
K0C1A0	0	0	0	0	0
K1L8H2	0	0	0	1	0
K2L3C8	0	0	0	0	0
K2P1V3	0	0	0	0	0
K0H2N0	0	0	1	0	0
K0L1H0	0	0	0	0	0
L1B1H8	0	0	0	0	0
L4L4Y7	0	0	0	0	0
L4J7Y3	0	0	0	0	0
M5M1B2	0	0	0	0	0
M4X1W4	0	0	0	0	0
M6G4A1	0	0	0	0	0
M4E1V8	0	0	0	0	0
M8Y1W3	0	0	0	0	0
M3H1T1	0	0	0	0	0
M8V2Z5	0	0	0	0	0
L4Y2N8	0	0	0	0	0
L6W2A4	0	0	0	0	0
L6V4H6	0	0	0	0	0
L9W1G2	0	0	0	0	0
L6L2X4	0	0	0	0	0
L9H1V1	0	0	0	0	0
L2E1Y3	0	0	0	0	0
N3C2E2	0	0	1	0	0
N2M3B5	0	0	0	0	0
N5C1G5	0	0	1	0	0
N5H1K9	0	0	0	0	0
N0M1T0	0	0	0	0	0
N0L1Z0	0	0	0	0	0
N6C2R5	0	0	0	0	0
N0G1L0	0	0	0	0	0
N0C1E0	0	0	0	0	0
P0M2L0	0	0	0	0	0
P4N1C6	0	0	0	0	0
P7E1H5	0	0	0	0	0
P0T2E0	0	0	0	0	0
P0W1E0	0	0	0	0	0
P9N3W7	0	0	0	0	0
P8N2Z6	0	0	0	0	0
ILI Sum	0	0	3	1	0
ILI Consultation Rate (per 1,000 patient visits)	0.00	0.00	5.24	3.22	0.00

Source: Public Health Agency of Canada
* Sentinel physician information is reported to the Public Health Agency of Canada
Note: The small numbers of sentinel physicians reporting at the local level make the ILI rates unstable. Please interpret these data correspondingly.

Table 6: Average Influenza-like illness consultation rate (per 1,000 patient visits) by age group and postal code as reported by Sentinel Physicians* in Ontario, for Week 25.

Postal Code	0 – 4	5 – 19	20 – 64	65 +	Unknown
K0C1A0	0	0	0	0	0
K1L8H2	0	0	2	1	0
K2L3C8	0	0	0	0	0
K2P1V3	0	0	0	0	0
K1J9M2	0	0	0	0	0
K0H2N0	0	0	0	0	0
L1B1H8	0	0	0	0	0
M5M1B2	0	0	0	0	0
M4X1W4	0	0	0	0	0
M4E1V8	0	0	0	0	0
M8Y1W3	0	0	0	0	0
M3H1T1	0	0	0	0	0
M8V2Z5	0	0	0	0	0
L4Y2N8	0	0	0	0	0
L6W2A4	0	0	0	0	0
L6V4H6	0	0	0	0	0
L9W1G2	0	0	0	0	0
L6L2X4	0	0	0	0	0
L9H1V1	0	0	1	1	0
L2E1Y3	0	0	0	0	0
N3C2E2	0	0	0	0	0
N2M3B5	0	0	0	0	0
N5C1G5	0	0	0	0	0
N5H1K9	0	0	0	0	0
N0R1G0	0	0	0	0	0
N0M1T0	0	0	0	0	0
N0C1E0	0	0	0	0	0
L4R4P4	0	0	0	0	0
P0P1S0	0	0	0	0	0
P0M2L0	0	0	0	0	0
P4N1C6	0	0	0	0	0
P7E1H5	0	0	0	0	0
P0T2E0	0	0	0	0	0
P0W1E0	0	0	0	0	0
P8N2Z6	0	0	0	0	0
ILI Sum	0	0	3	2	0
ILI Consultation Rate (per 1,000 patient visits)	0.00	0.00	5.47	7.69	0.00

Source: Public Health Agency of Canada
* Sentinel physician information is reported to the Public Health Agency of Canada
Note: The small numbers of sentinel physicians reporting at the local level make the ILI rates unstable. Please interpret these data correspondingly.

FURTHER INFORMATION

1. Ontario Ministry of Health and Long-Term Care
   Previous issues of the *Ontario Influenza Bulletin* can be accessed at:
   http://www.health.gov.on.ca/english/providers/program/pubhealth/flu/flu_06/flubul_mn.html

2. Health Agency of Canada
   Issues of FluWatch can be accessed at:
   www.phac-aspc.gc.ca/fluwatch/

3. United States Centers for Disease Control and Prevention
   http://www.cdc.gov/flu/weekly/fluactivity.htm

INFORMATION ABOUT AVIAN INFLUENZA

For latest information on the status of avian influenza worldwide please use the following link:

Public Health Agency of Canada
http://www.phac-aspc.gc.ca/h5n1/index.html

APPENDIX - I

Definitions for influenza activity levels:

No Data: No activity report corresponding to the surveillance week was received at the Ministry of Health and Long-Term Care Call Centre by the Tuesday (at 4 p.m.) following the end of the surveillance period.

No Activity: No laboratory confirmed* influenza cases(s) or outbreak detected during the past four weeks within the influenza surveillance region, however, sporadically occurring **ILI** may be reported†

Sporadic: Sporadically occurring **ILI and laboratory confirmed influenza* case(s) with NO outbreaks** detected within the influenza surveillance region†

Localized: sporadically occurring **ILI and laboratory confirmed influenza* case(s) together with outbreaks of ILI** in schools and/or worksites or laboratory confirmed influenza in residential institutions occurring **in less than 50% of the influenza surveillance region(s)†**

Widespread: sporadically occurring **ILI and laboratory confirmed influenza* case(s) together with outbreaks of ILI** in schools and/or worksites or laboratory confirmed influenza in residential institutions occurring **in greater than or equal to 50% of the influenza surveillance region(s)†**

* Confirmation of influenza within the surveillance region at any time within the prior week
† Sub-regions within the province or territory as defined by the provincial/territorial epidemiologist

Influenza-Like Illness (ILI) Definitions:

A) ILI in the general population:

Acute onset of respiratory illness with fever and cough and with one or more of the following - sore throat, arthralgia, myalgia, or prostration which could be due to influenza virus. In children under 5, gastrointestinal symptoms may also be present. In patients under 5 or 65 and older, fever may not be prominent.

B) ILI/Influenza outbreaks:

Schools and work sites: greater than 10% absenteeism on any day, most likely due to ILI.

Residential institutions: two or more cases of ILI within a seven-day period, **including at least one laboratory confirmed case**.

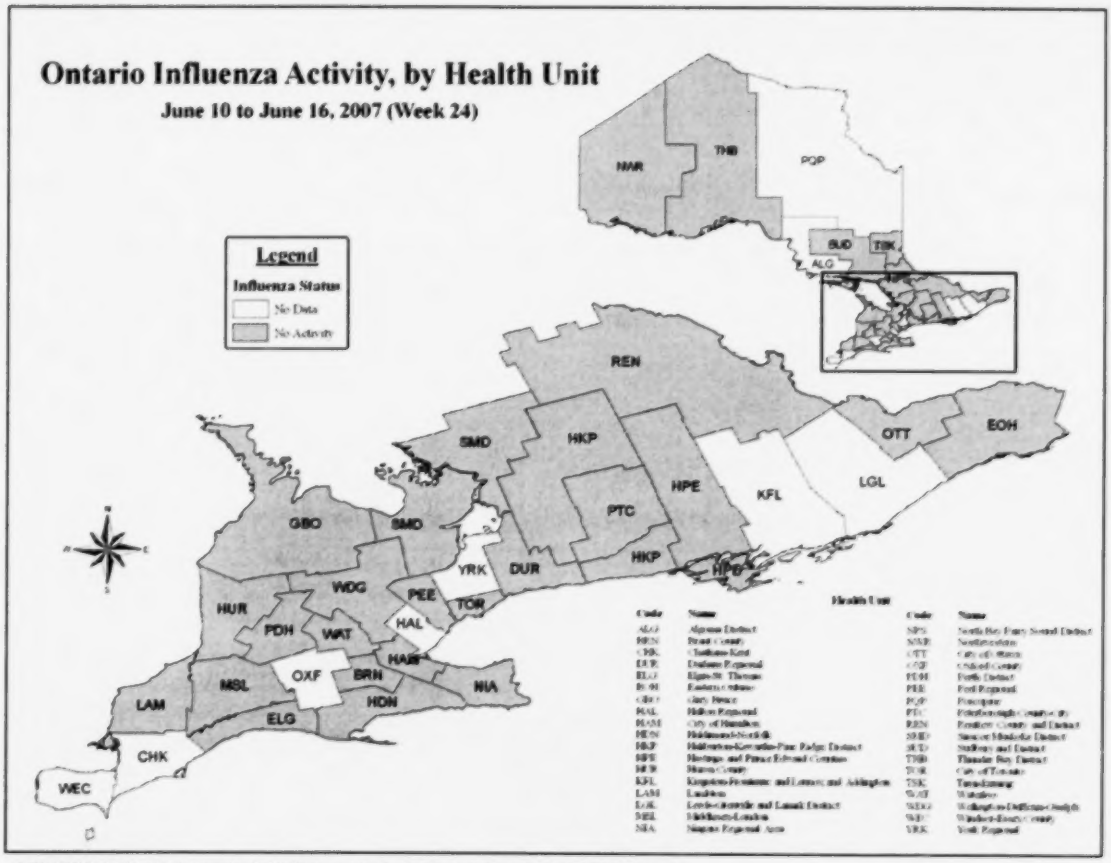
Influenza Surveillance Weeks 2006-2007 and date of submission of Appendix C

WEEKS	START	END	Appendix C Submission to MOHLTC
26	24-Jun-07	30-Jun-07	3-Jul-07
27	1-Jul-07	7-Jul-07	10-Jul-07
28	8-Jul-07	14-Jul-07	17-Jul-07
29	15-Jul-07	21-Jul-07	24-Jul-07
30	22-Jul-07	28-Jul-07	31-Aug-07
31	29-Jul-07	4-Aug-07	7-Aug-07
32	5-Aug-07	11-Aug-07	14-Aug-07
33	12-Aug-07	18-Aug-07	21-Aug-07
34	19-Aug-07	25-Aug-07	28-Aug-07
35	26-Aug-07	1-Sep-07	4-Sep-07

Ontario

Ministry of Health and Long-Term Care
Public Health Division

Weekly Ontario Influenza Activity Map



SOURCE: MOHLTC [Provincial Influenza Activity Report (Appendix C) Database]

Influenza Activity levels are assigned by local public health units and reported to the MOHLTC every week. Activity levels are assigned based on laboratory confirmation of influenza, influenza like illness (ILI) reports from various sources including hospitals, institutions experiencing respiratory infection outbreaks, physicians' offices, etc.

Activity level definitions for the 2006-07 influenza seasons are as follows:
No Data: No activity report corresponding to the surveillance week was received at the Ministry of Health and Long-Term Care Call Centre by the Tuesday (at 4 p.m.) following the end of the surveillance period. **No Activity:** No laboratory confirmed* influenza cases(s) or outbreak detected during the past week within the influenza surveillance region, however, sporadically occurring ILI may be reported. **Sporadic:** Sporadically occurring ILI and laboratory confirmed influenza* case(s) with NO outbreaks detected within the influenza surveillance region **Localized:** sporadically occurring ILI and laboratory confirmed influenza* case(s) together with outbreaks of ILI in schools and/or worksites or laboratory confirmed influenza in residential institutions occurring in less than 50% of the influenza surveillance region(s) **Widespread:** sporadically occurring ILI and laboratory confirmed influenza* case(s) together with outbreaks of ILI in schools and/or worksites or laboratory confirmed influenza in residential institutions occurring in greater than or equal to 50% of the influenza surveillance region(s)

** Confirmation of influenza within the surveillance region at any time within the prior week*

Note: The Weekly Ontario Influenza Activity Map will be posted on this site bi-weekly, alternating with the *Ontario Influenza Bulletin* (which contains the Influenza Activity map), until the end of October, 2007. As of November 4, 2007, the *Ontario Influenza Bulletin* will be published weekly.